# DATA VISUALIZATION TECHNIQUES

## Big Data

## Open Concept Architecture

## Big Data

- **High Variety, Velocity, and Volume and Low Veracity**

- Data that requires specific technology, analytics and algorithms for its transformation into value

- Enhanced decision making, insight discovery, pattern recognition and process optimization.

Source: Gartner

**Business Intelligence**

Uses **descriptive and prescriptive analytics** with data with high information density to measure things, uncover patterns and detect trends.

**vs**

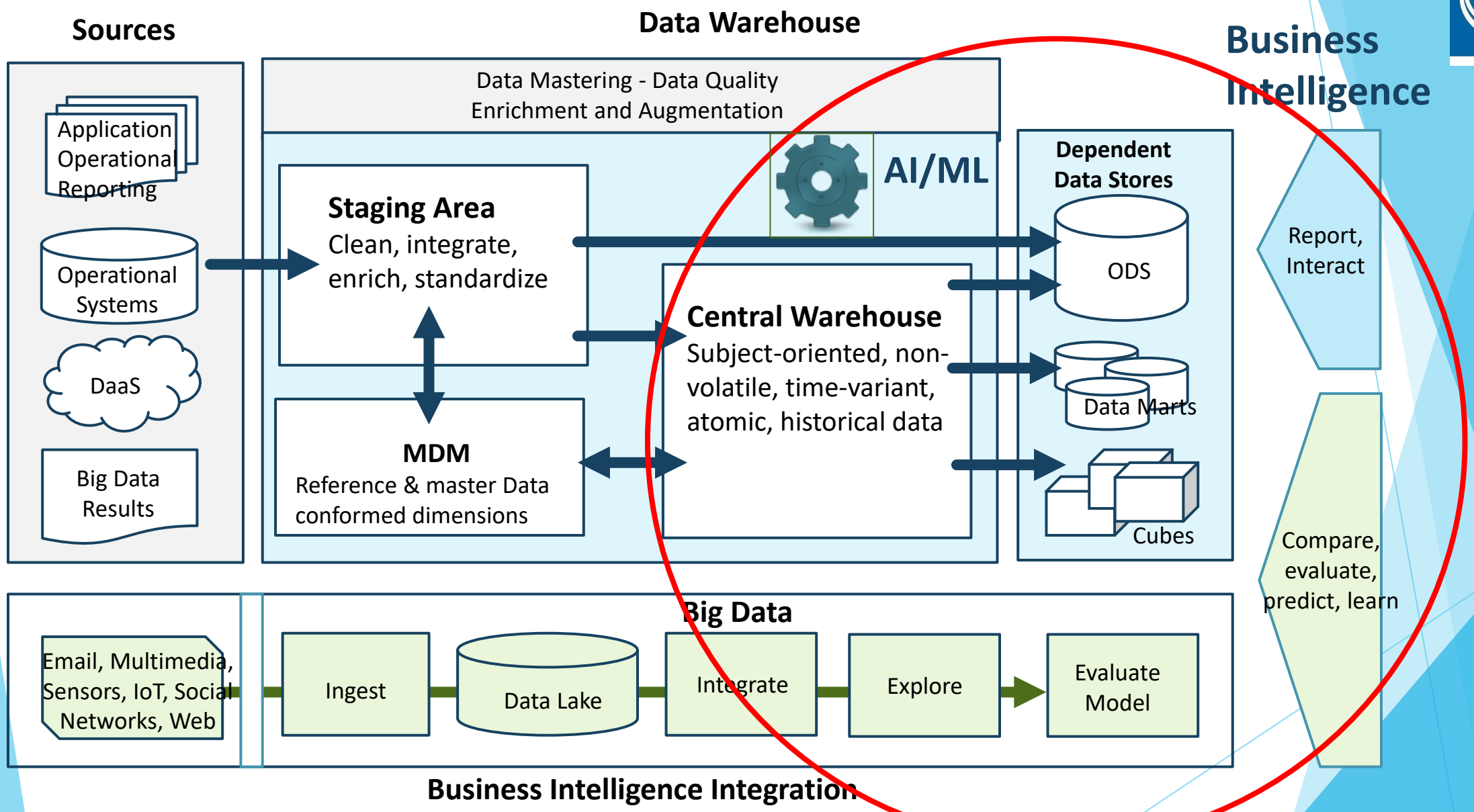
**Big Data**

Uses **inductive statistics and nonlinear systems to infer laws** (regressions, nonlinear relationships, and causal effects) from large sets of data with low information density to reveal relationships and dependencies, or to perform predictions of outcomes and behaviours.

"Towards scalable systems for big data analytics: a technology tutorial". IEEE Access. 2: 652–687.

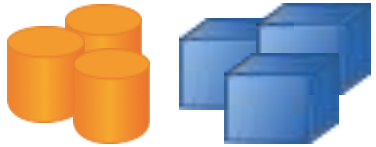
## Open Architecture Definition

- It is an architecture that integrates data from different sources on-premises and across cloud environments.
  - The open architecture supports multiple programming languages and frameworks
  - It supports AI initiatives, natural language querying and machine learning to deliver efficiencies
  - Unifies enterprise data platform that runs on-site and across any cloud
  - The platform integrates SQL, NoSQL/JSON, time series and spatial data
  - AI-powered automation to support transactional workloads and optimize query performance for advanced analytics




[1] Source: Copyright © 2017 DAMA International – DMBOK2 - Technics Publications, Basking Ridge, New Jersey, USA

## Data Sources



SQL Server

Data Warehouse
Data Marts, cubes

SaaS

Excel, XML,
Office Files

Unstructured
semi-structured
data, NoSQL

AI/ML

Direct Connection

ETL

Star Schema

Database with
the tables for
rapid analytics

Direct
Connection

**BI Application
for Data
Visualization
and Analysis**

Business Intelligence
and Analytics Area

KPIs

Business Processes,
rules, legacy
systems

**Staging
Area**

Integration, Prep/
Staging